

## **PATENT APPLICATION**

### **IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Edouard BUGNION                      Group Art Unit: 2154  
Serial No.: 09/592,368                                  Examiner: Mohammed Siddiqi  
Filed: 06/12/2000  
Title: Binary Translator with Precise Exception Synchronization Mechanism

Attorney ref: VMware5

Mail Stop PETITION  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

#### **Renewed Petition under 37 CFR 1.137(b)**

Sir:

The above-identified patent application became abandoned for failure to file a proper reply in a timely manner to an Office Action mailed September 9, 2004. Applicant submitted a Petition for Revival of an Application for Patent Abandoned Unintentionally under 37 CFR 1.137(b) for this application on April 6, 2007. A Decision on Petition, dismissing the Petition for Revival, was mailed on January 23, 2008. Applicant hereby requests reconsideration of the Petition for Revival, based on additional information provided herein. Specifically, this Renewed Petition includes (a) a Statement by Jeffrey Pearce in Support of Petition for Revival of an Unintentionally Abandoned Application and (b) a Statement by Darryl Smith in Support of Petition for Revival of an Unintentionally Abandoned Application.

The Director has requested additional information regarding (1) the delay in reply that originally resulted in the abandonment and (2) the delay in filing an initial petition pursuant to 37 CFR 1.137(b) to revive the application. As explained and described in the Statement by Jeffrey Pearce, the delay of period (1) occurred because, based on several communications with the Examiner, both written and by telephone, Pearce

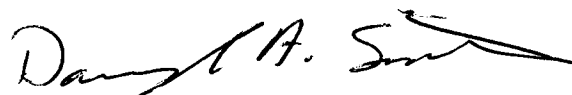
expected that a Notice of Allowance would issue in the case. Accordingly, Pearce felt no reason to docket any other response date. The entire delay that resulted in the abandonment of the application was unintentional.

Also, as explained and described in the Statement by Jeffrey Pearce, the delay of period (2) occurred because Pearce relied on the Examiner to take some action related to the abandoned application. In a telephone conversation after the application had become abandoned, Pearce and the Examiner discussed the fact that Pearce had followed the suggestions of the Examiner on how to get the case in condition for allowance. After this telephone conversation, Pearce expected that the Examiner would look into the situation and that he would hear back from the Examiner, or, more generally, from the Patent and Trademark Office, regarding what needed to be done with respect to the unintentional abandonment of the application. Again Pearce felt no reason to docket any date for further action. Pearce apparently forgot about the status of this patent application, and he does not recall having checked on its status since his last conversation with the Examiner. The fact that the application had been abandoned was not discovered until February of 2007. I then proceeded to file a petition to revive without any intentional delay. The entire delay from the abandonment of the application until the filing of the initial petition for revival was unintentional. Also, there was no intentional delay from my receipt of the notice of dismissal of the petition to revive until the filing of this Renewed Petition.

Date: 11 April 2008

3401 Hillview Ave.  
Palo Alto, CA 94304  
Phone: (650) 427-1049

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Darryl A. Smith", with a stylized flourish at the end.

Darryl A. Smith  
Reg. No. 37,723  
Attorney for the Applicant

**PATENT APPLICATION**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Edouard BUGNION                      Group Art Unit: 2154  
Serial No.: 09/592,368                      Examiner: Mohammed Siddiqi  
Filed: 06/12/2000  
Title: Binary Translator with Precise Exception Synchronization Mechanism  
Attorney ref: VMware5

**STATEMENT BY JEFFREY PEARCE**  
**IN SUPPORT OF PETITION TO REVIVE**  
**AN UNINTENTIONALLY ABANDONED APPLICATION**

1. I am a registered patent attorney. I wrote and originally was responsible for prosecution of the above-identified patent application ("the VMware5 patent application").
2. I have been working as a patent attorney for VMware, Inc. ("VMware") since 1998. Initially I provided legal services to VMware as an outside attorney, on a contract basis. My workload of VMware patent work continued to increase until I effectively became an in-house patent attorney for VMware. I became a part-time employee of VMware beginning in or around 2001. I increased my commitment to VMware such that, by no later than March of 2003, I became a full-time employee of VMware. I was then continuously employed by VMware as an in-house patent attorney until I left in December of 2006.
3. Prior to November of 2002, I was the only patent attorney writing and prosecuting patent applications for VMware. Darryl Smith ("Smith") began writing patent applications for VMware in November of 2002, on a contract basis, and then became employed by VMware, also as an in-house patent attorney. Smith has been continuously employed by VMware since February of 2003.
4. Smith and I were the only in-house patent attorneys at VMware until May of 2006. Prior to May of 2006, Smith and I were peers, meaning that neither reported to nor was supervised by the other. I had reported to Edouard Bugnion ("Bugnion"), first as an outside attorney and then as an in-house attorney from 1998 through the time when Smith began working at VMware in 2003. Smith and I then reported to Bugnion from February of 2003 to some time in the first half of 2005, when Bugnion left the company. Smith and I then reported to Kieran Harty from some time after Bugnion left the company until February of 2006. Smith and I then reported to

Rashmi Garde ("Garde"), the current Vice President and General Counsel of VMware, from February of 2006 until May of 2006. Bugnion, Kieran Harty and Garde each managed the patent program at VMware and each had other responsibilities at VMware as well, during the time that each of them was managing Smith and me. In May of 2006 VMware hired Ralph Veseli ("Veseli") as the Director of Intellectual Property for VMware. Veseli also worked as an in-house patent attorney, in addition to being the manager of Smith and me and the manager of the patent program at VMware, from May of 2006 until March of 2007, when Veseli went on a leave of absence and ultimately left the company. During the entire time from February of 2003 until December of 2006, Smith and I were given independent and sole responsibility for prosecuting our own docket of pending patent applications. Even after I left my employment as an in-house patent attorney at VMware in December 2006, I was retained as an outside patent attorney, and I retained the sole responsibility for prosecuting my own docket of pending patent applications until February of 2007.

5. Smith and I had no dedicated administrative support until January of 2006. In January of 2006, VMware hired Terry Alvarez, a patent administrator and paralegal, as a full time employee to support the patent program, including Smith and me. Prior to January of 2006, Smith and I had to perform almost all tasks related to VMware's patent prosecution program ourselves, including preparing and filing patent applications and other documents, and keeping track of our own dockets. Even after January of 2006, Smith and I each maintained our own docketing information through February of 2007.
6. From the date of filing the VMware5 patent application until February of 2007, I was solely responsible for prosecuting the VMware5 patent application.
7. To the best of my knowledge, no one at VMware, besides me, knew about the status of the VMware5 patent application from November of 2004, when I last communicated with the inventor, Bugnion, about the VMware5 patent application, until the abandonment of the VMware5 patent application was discovered in February of 2007.
8. An Office Action for the VMware5 patent application was mailed on 9 September 2004. This Office Action ("the outstanding Office Action") is the most recent Office Action for the VMware5 patent application. When the outstanding Office Action was mailed, I was a full-time employee of VMware; however, I worked from a home office in Washington State and commuted to the principal place of business of VMware in Palo Alto, California about every other week for two or three days at a time. The outstanding Office Action was mailed to the address of my home office: 34825 Sultan-Startup Rd., Sultan, WA 98294.
9. VMware did not have any docketing software. Smith, who worked at the main office in Palo Alto, and I maintained a single Microsoft Word document with information relating to patent applications and issued patents. This Word document was not

used for docketing purposes, however. In particular, it was not used to alert us of upcoming deadlines, and it was not my practice to review this document to determine the status of the applications for which I was responsible. Instead, this document was used to maintain identifying information about our pending applications, including the title, the inventors, the filing date, the application serial number, the associated attorney docket number and the patent number and issue date for issued patents. The document was also used to record important events related to the status of the application, including Office Actions, responses, Notices of Allowances and payments of issue fees. For the VMware5 patent application, the outstanding Office Action was noted in this Word document, along with notations relating to subsequent communications with the Examiner related to the VMware5 patent application. It was also our practice to maintain a complete physical file of prosecution documents for all pending applications at VMware's main office.

10. For docketing purposes, i.e. keeping track of upcoming deadlines, it was my practice to note due dates for Office Action responses as Calendar events in Microsoft Outlook, and also on a wall calendar. I also scanned Office Actions and sent copies to inventors for review and comment. I did so in this case and began e-mail correspondence with the inventor, Bugnion, who at the time was also the manager of the patent program at VMware.
11. On 28 September 2004 I faxed a response to the outstanding Office Action. In this response, the applicant requested withdrawal of the finality of the outstanding Office Action.
12. On or about 3 November 2004, Examiner Siddiqi contacted me to discuss the application. Based on the Image File Wrapper in the Secured Patent Application Information Retrieval system ("private PAIR"), it appears that an Advisory Action was mailed to my home office on 17 November 2004. Probably as a result of the Advisory Action, I contacted and again spoke with the Examiner on 21 November 2004 to discuss the application. During this telephone call, the Examiner observed that neither the Krishnaswamy reference nor the previously cited prior art had any teaching of how to deal with synchronous exceptions, especially of different types. I noted that independent claim 15 already included a limitation that overcame Krishnaswamy, and that dependent claims 5 and 19 also added such further limitations relative to their base claims 1 and 16. I suggested that incorporating claims 5 and 19 into claims 1 and 16, respectively, would therefore leave independent claims that would be allowable, without requiring any additional search or review.
13. Examiner Siddiqi suggested that the best way to expedite prosecution of this case would be for me to fax a proposed, draft amendment to him, not at the main Office fax number, but rather to the fax number of his group. He could then do an Examiner's amendment using the draft amendment as a template and issue a Notice of Allowance. I accordingly faxed a draft amendment to Examiner Siddiqi on

22 November 2004; I expected a Notice of Allowance in due course and felt no reason to docket any other response date.

14. In the spring of 2005, I downloaded and attempted to install Microsoft's Service Pack 2 in my home office computer. This installation – controlled by Microsoft's own installation wizard - damaged the file structure of my hard drive so badly that my computer would no longer boot even in "safe mode" and a data recovery company in Everett, Washington, was unable to recover any of my stored data, including all Outlook information. I ultimately chose simply to buy a new computer.
15. Some time in the first half of 2005, the inventor Bugnion resigned his position at VMware.
16. After Bugnion's departure, on 16 June 2005, I recall that Examiner Siddiqi called me to tell me that the "draft response" I had faxed had somehow (not because of anything he had done) been treated as a regular amendment, but had not been accepted because it was marked as a "draft." I reminded him that he himself suggested faxing it to the number I faxed it to and that it was never supposed to be a formal amendment by the applicant to be entered at all. Because more than six months had elapsed since the outstanding Office Action had been mailed, he said that he might have to issue a notice of abandonment. I observed that we had done just what the Examiner had suggested and that we should not have to deal with an abandonment we certainly never intended; indeed, we acted promptly to respond to the Office Action and actually had been anticipating a Notice of Allowance as a result of our November 2004 communications. He said he had never encountered the situation before and was not sure what the proper procedure would be. I was under the impression that the Examiner would look into the situation. I didn't know what would happen next in the case, but I expected to receive additional information, either from the Examiner directly, or in some other manner from the Patent and Trademark Office. Because I did not know of any action I needed to take, I did not record any reminder to prepare anything further for the VMware5 application.
17. The Microsoft Word document that was used for noting information related to patent applications, issued patents, Office Actions and other relevant information contained the following information related to the outstanding Office Action and subsequent communications with the Examiner, in connection with the VMware5 patent application (the font, the font size and the selected bolding of text are from the Microsoft Word document):
  - Office action #4: (final)
  - Mailed: 2004-09-09
  - Response: 2004-09-28
  - Phone call from Examiner: 2004-11-03**
  - Response faxed: 2004-11-04, 11-19 and 11-22 (all pages received)**
  - Phone conference with Examiner: 2005-06-16**

18. The VMware5 patent application is a Continuation-in-Part of U.S. Patent Application No. 09/179,137, "Virtualization System Including a Virtual Machine Monitor for a Computer with a Segmented Architecture," which issued on 28 May 2002 as U.S. Patent 6,397,242. Later in 2002, the assignee VMware filed a law suit against a competitor for infringement of the '242 patent. As part of the discovery phase of the '242 patent law suit, VMware gave all of its physical files relating to the VMware5 patent application to its outside litigation counsel for copying and review. I do not recall when these were returned, especially as VMware changed litigation counsel in the period 2004-2005. I do recall, however, that the files for several applications were in disorder upon return. In particular, some documents were not in their proper chronological order, and, more importantly, some documents were missing entirely.
19. Based on the Image File Wrapper in private PAIR, it appears that a Notice of Abandonment was mailed to my home office on 6 March 2006. The Notice of Abandonment indicates that I confirmed the abandonment of the VMware5 patent application on 3 February 2006. I do not remember having confirmed the abandonment, I do not remember having received the Notice of Abandonment, and neither I nor VMware had any record of the Notice of Abandonment until the notice was recently downloaded from private PAIR.
20. VMware did not hire an administrative assistant for the patent group until January of 2006. In January of 2004, EMC Corp. acquired the assignee VMware. To avoid missing any due dates for our growing portfolio of patents and patent applications, our newly hired assistant, Terry Alvarez, went to the headquarters of EMC to learn how to use their patent docketing system, which she would be able to access from Palo Alto. Soon thereafter we began transferring information about all of our issued patents and pending patent applications for entry in the EMC docketing system.
21. In May of 2005, VMware hired Veseli as Director of Intellectual Property for VMware. Before we had completed our integration into the EMC patent docketing system, Veseli stopped it altogether; instead, he began personally to program a form of database into which information about our issued patents, pending patent applications and invention disclosures would be input. This database was not a patent docketing system, however, in that it did not have functionality for providing alerts about upcoming deadlines, and it did not have due date reporting functionality, as is common in patent docketing systems. As part of this effort of entering data into the database, Veseli hired a temporary worker whose job would be in part to go through our files and input data. Veseli instructed me to transfer my physical files for pending applications, including for the VMware5 patent application, to the Palo Alto office. I never got this file back.
22. During the entire summer of 2006, I was on an extended leave of absence from VMware, during most of which I was on the Pacific Ocean and unreachable by telephone. Before I left on this leave of absence, I assured myself as best I could that there were no outstanding Office actions I needed to prepare responses to.

Knowing that almost no Office action requires a response within two months, and that I would be completely unreachable for no more than five weeks at a time, I believed that I would not miss any response date that might arise while I was away. I also recall making arrangements with my wife and with neighbors to check mail arriving at my house while I (and later my wife also) was unreachable, in particular anything from the USPTO. I had also made arrangements for Darryl Smith to be notified in the event that I was lost at sea or killed.

23. I quit VMware in December 2006. I was unaware of further developments in the prosecution of the VMware5 application until February of 2007, when I received a phone call from Smith, informing me that the VMware5 patent application had been abandoned.
24. As the statements above show, it was never the intent of the applicant, the assignee or me, personally, to allow the VMware5 application to become abandoned; rather, the original abandonment was due to events that transpired in part even within the Office. After my telephone conversation with the Examiner on 16 June 2005, I don't remember having thought about the status of the VMware5 application again until I was informed in February of 2007 that the application had become abandoned. I don't remember having checked on the status of the VMware5 application during that time frame either. The delay in petitioning to revive the application was due primarily to problems of docketing and oversight caused in part by changes of personnel and internal policies, and required and requested transfers of files. It was never the intent of the applicant, the assignee or me, personally, to delay filing a petition to revive the application.
25. I declare under penalty of perjury that the statements above are true, or are true to the best of my knowledge and belief.

Date: 11 April 2008

Respectfully submitted,

/Jeffrey Pearce/

34825 Sultan-Startup Rd.  
Sultan, WA 98294  
Phone: (425) 210-9122

Jeffrey Pearce  
Reg. No. 34,729



## **PATENT APPLICATION**

### **IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Edouard BUGNION                      Group Art Unit: 2154  
Serial No.: 09/592,368                      Examiner: Mohammed Siddiqi  
Filed: 06/12/2000  
Title: Binary Translator with Precise Exception Synchronization Mechanism  
Attorney ref: VMware5

#### **STATEMENT BY DARRYL SMITH** **IN SUPPORT OF PETITION TO REVIVE** **AN UNINTENTIONALLY ABANDONED APPLICATION**

1. I am a registered patent attorney, and I have been employed by VMware, Inc. ("VMware"), the assignee of the above-identified patent application, as an in-house patent attorney continuously since February of 2003. I also wrote two patent applications for VMware on a contract basis prior to February of 2003, beginning in November of 2002.
2. At the time my employment at VMware began, Jeffrey Pearce ("Pearce") was also working as a patent attorney for VMware. Although, Pearce was initially working on a contract basis, he was effectively working as an in-house patent attorney for VMware. Pearce became an employee of VMware at some time before I began working at VMware and he became a full time employee shortly after I began working at VMware. Pearce was then continuously employed by VMware as an in-house patent attorney until he left in December of 2006.
3. Pearce and I were the only in-house patent attorneys at VMware from February of 2003 until May of 2006. Prior to May of 2006, Pearce and I were peers, meaning that neither reported to nor was supervised by the other. Pearce and I both reported to Edouard Bugnion ("Bugnion") from February of 2003 to some time in the first half of 2005, when Bugnion left the company. Pearce and I then reported to Kieran Harty from some time after Bugnion left the company until February of 2006. Pearce and I then reported to Rashmi Garde ("Garde"), the current Vice President and General Counsel of VMware, from February of 2006 until May of 2006. Bugnion, Kieran Harty and Garde each managed the patent program at VMware and each had other responsibilities at VMware as well, during the time that each of them was managing Pearce and me. In May of 2006 VMware hired Ralph Veseli ("Veseli") as the Director of Intellectual Property for VMware. Veseli also worked as an in-house patent attorney, in addition to being the manager of Pearce and me and

the manager of the patent program at VMware, from May of 2006 until March of 2007, when Veseli went on a leave of absence and ultimately left the company. During the entire time from February of 2003 until December of 2006, Pearce and I were given independent and sole responsibility for prosecuting our own docket of pending patent applications. Even after Pearce left his employment as an in-house patent attorney at VMware in December 2006, he was retained as an outside patent attorney, and he retained the sole responsibility for prosecuting his own docket of pending patent applications until February of 2007.

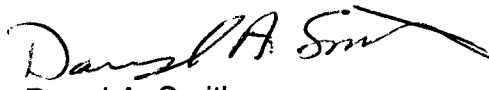
4. Pearce and I had no dedicated administrative support from February of 2003 until January of 2006. In January of 2006, VMware hired Terry Alvarez, a patent administrator and paralegal, as a full time employee to support the patent program, including Pearce and me. Prior to January of 2006, Pearce and I had to perform almost all tasks related to VMware's patent program ourselves, including preparing and filing patent applications and other documents, and keeping track of our own dockets. Even after January of 2006, Pearce and I each maintained our own docketing information through February of 2007.
5. From February of 2003 to February of 2007, Pearce was solely responsible for prosecuting the above-identified patent application ("the VMware5 patent application").
6. From February of 2003 to February of 2007, I did not monitor the status of the VMware5 patent application, or any other patent applications for which Pearce was responsible.
7. To the best of my knowledge, no one at VMware other than Pearce monitored the status of any pending patent applications, including the VMware5 patent application, for which Pearce was responsible, except that some inventors probably monitored the status of their own patent applications through Pearce.
8. To the best of my knowledge, no one at VMware intended to abandon the VMware5 patent application. In fact, I have found support for the opposite proposition, namely that VMware intended not to abandon the VMware5 patent application. This support is provided by Exhibit A attached to this Statement. Exhibit A is a copy of an email exchange between Pearce and Bugnion. Bugnion was the sole inventor for the VMware5 patent application and, at the time of the email exchange, Bugnion was the manager of the patent program at VMware. This email exchange took place on November 3, 2004, and is the last communication of which I am aware between Pearce and Bugnion relating to the VMware5 patent application. As is evident from the email exchange: (a) Pearce proposed to fax an amended claim to the Examiner; (b) Bugnion approved Pearce's filing of the amended claim; and (c) Bugnion instructed Pearce to "make sure to file the previous claims as a continuation application once the first patent gets allowed."

9. To the best of my knowledge, no one at VMware was aware that the VMware5 patent application had become abandoned until February of 2007. According to an internal VMware confidential memorandum from Veseli to Garde, on February 14, 2007, Veseli, who was manager of the VMware patent program at the time, called the U.S. Patent and Trademark Office to check on the status of several older VMware patent applications, and he was informed that the VMware5 patent application had been abandoned.
10. At a meeting on February 16, 2007 with Garde and Veseli, Garde and Veseli informed me that the VMware5 patent application had been abandoned.
11. Garde transferred responsibility for the VMware5 patent application to me, and she asked me to prepare a petition to revive the VMware5 patent application. I worked with Pearce to obtain an amendment as a response to the outstanding office action for the VMware5 patent application, and I mailed the petition to revive, along with the amendment, to the U.S. Patent and Trademark Office on April 6, 2007.
12. I received a notice dated January 23, 2008 that the petition had been dismissed, and I worked with Pearce to supply a response, which response is submitted this day.
13. To the best of my knowledge, it was never the intent of the applicant or the assignee to allow the VMware5 patent application to become abandoned, and, once the abandonment of the VMware5 patent application was discovered, there was no intentional delay in filing a petition to revive it.
14. I declare under penalty of perjury that the statements above are true, or are true to the best of my knowledge and belief.

Date: 11 April 2008

Respectfully submitted,

3401 Hillview Ave.  
Palo Alto, CA 94304  
Phone: (650) 427-1049

  
Darryl A. Smith  
Reg. No. 37,723  
Attorney for the Applicant

RE: VM5 suggested new claim with synchronous exception handling included

**Darryl Smith**

*Exhibit A*

*Statement by Darryl Smith*

**From:** Jeff Pearce

**Sent:** Wednesday, November 03, 2004 3:57 PM

**To:** Edouard Bugnion

**Subject:** RE: VM5 suggested new claim with synchronous exception handling included

Will do. If we get the same examiner for the continuation (not a given) then we should expect ultimately to have to appeal. Examiner Siddiqi doesn't sound like he's ever going to accept our argument that Krishnaswamy's "delay until reaching a GAR point" does not provide a precise guarantee in our sense because, he says, one could simply choose always to put GAR points at the end of translated instruction sequences.

j

**From:** Edouard Bugnion

**Sent:** Wed 11/3/2004 2:56 PM

**To:** Jeff Pearce

**Cc:** Edouard Bugnion

**Subject:** RE: VM5 suggested new claim with synchronous exception handling included

Looks good to me. Let's go ahead and file it. Of course let's make sure to file the previous claims as a continuation application once the first patent gets allowed.

-----Original Message-----

**From:** Jeff Pearce [<mailto:jslusher@vmware.com>]

**Sent:** Wed Nov 03 14:51:54 2004

**To:** Edouard Bugnion

**Subject:** VM5 suggested new claim with synchronous exception handling included

Here's what I would fax the examiner:

1. (Currently amended) In a system in which a hardware target computer system, which has a target instruction set architecture (ISA), executes a target instruction sequence corresponding to a source instruction sequence of a source system, which has a source ISA and is running on the target computer system, a method for handling exceptions comprising the following steps:

converting the source instruction sequence into the target instruction sequence by binary translation, each instruction in the source instruction sequence being converted into a corresponding translated target instruction sequence, which may consist of a single target instruction;

determining beginning and ending addresses of each source instruction and each corresponding translated target instruction;

generating a mapping between the beginning and ending addresses of each source instruction and its corresponding translated target instruction sequence;

executing the translated target instruction sequence;

at any point in the translated target instruction sequence, sensing the presence of an exception and determining whether each sensed exception is synchronous or asynchronous,

a synchronous exception being defined as an exception resulting from attempted execution of a target instruction, in which synchronous exceptions are of either of two types, namely, transparent and non-transparent, a transparent exception being defined as an exception requiring processing action wholly within the target computer system, and a non-transparent exception being defined as an exception requiring

4/11/2008

RE: VM5 suggested new claim with synchronous exception handling included

processing that alters a visible state of the source system; and

an asynchronous exception being defined as an exception resulting from an event unrelated to the execution of a target instruction; and

if the sensed exception is asynchronous, resuming to completion the execution of the target instruction sequence in binary translation from the point in the translated target instruction sequence at which the asynchronous exception was sensed before handling the asynchronous exception and thus delaying handling of each asynchronous sensed exception until, and no later than, completion of execution of the target instruction sequence corresponding to the current source instruction when the asynchronous exception is sensed;

determining whether the sensed synchronous exception is transparent or non-transparent;

handling each transparent synchronous exception externally from the source system, the visible state of the source system thereby remaining unaltered; and

forwarding to the source system for processing each non-transparent synchronous exception.